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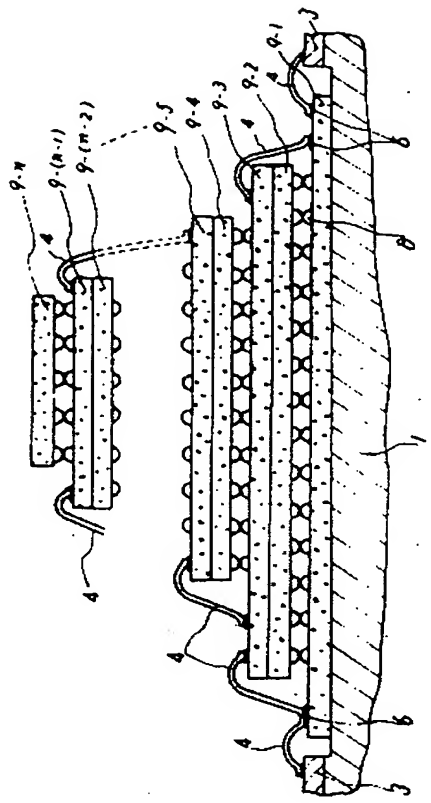
TITLE : SEMICONDUCTOR DEVICE



ABSTRACT : PURPOSE: To permit high speed and to increase the reliability of a wiring connection and integration by a method wherein various kinds of semiconductor substrates having different sizes and projected electrodes formed on the main surfaces of integrated circuits are alternately and three dimensionally stacked by projected inter-electrode connections or connections between the rears of the semiconductor substrates.

CONSTITUTION: In the drawing, the numeral 1 is a ceramic substrate, 3 are internal leads, 4 are metallic leads such as gold wires, Al wires, 6 are pads formed by locating at the circumference sections on the main surfaces of the semiconductor substrates, and 8 are projected electrodes formed on the main surfaces of the semiconductor substrates. Said substrates are the semiconductor substrates formed different sized memory circuits and the substrates are three diemensionally stacked on the ceramic substrate 1 in the order of larger semiconductor substrates. Electrical contacts are available for the integrated circuits on the semiconductor substrates through external and internal leads 3-gold wires 4 by electrical paths made by the combinations of interbumps 8-pads 6-gold wires 4 or interbumps 8-gold wires 4-pads 6 or the like.